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Showcasing the Geology of American's National Parks and Monuments

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ABSTRACT

Among America's great treasures are its national parks, monuments, nature preserves, and historical sites. Many of America's national parks feature unique and spectacular geology. Sigma Gamma Epsilon chapters, geology clubs, and individuals are encouraged to organize and submit a photo array featuring the geology of a particular national park or monument.

KEYWORDS: geology photos, national park photos, national monument photos.

INTRODUCTION

Among America's great treasures are its national parks, monuments, nature preserves, and historical sites. Criteria for establishing a national park include the area's natural beauty, unique geological features, special ecosystems, and recreational opportunities. A national park need not have all four of the criteria, although in truth, nearly all have some aspect of each. National monuments are typically chosen for a single historical, archeological, or geological significant feature.

According to Wikipedia (the source of ALL knowledge), there are currently 59 national parks and 108 national monuments. Although all 59 national parks have some features of geological interest, at least 42 of the parks are of significant geological appeal and include parks such as Yellowstone, Zion, Yosemite, Zion, Carlsbad Caverns, the Grand Canyon, Big Bend and Capitol Reef, to name just a few. The first national park, Yellowstone, was signed into law by President Ulysses S. Grant in 1872, due to its beauty and significant geothermal features, as documented by the Hayden Geological Survey of 1871 (fig. 1).

At least 30 of the nation's 108 national monuments are geologically significant and include, but not limited to, monuments like the Grand Staircase-Escalante, Jewel Cave, Mt. St. Helens, John Day Fossil Beds, Devils Tower, and Cedar Breaks. Devils Tower was the first national monument and established by President Theodore Roosevelt in 1906. The creation of Devils Tower National Monument was due entirely to its geological significance as an eroded laccolith (fig. 2).

Figure 1. Members of the Hayden Survey admire the power of Old Faithful Geyser in 1878(?). Times have certainly changed for watching the eruptions of Old Faithful Geyser. Photo by W.H. Jackson is from the U.S. Geological Survey's photo library. Image file: /htmllib/batch02/batch02j/batch02z/jwh00411.jpg

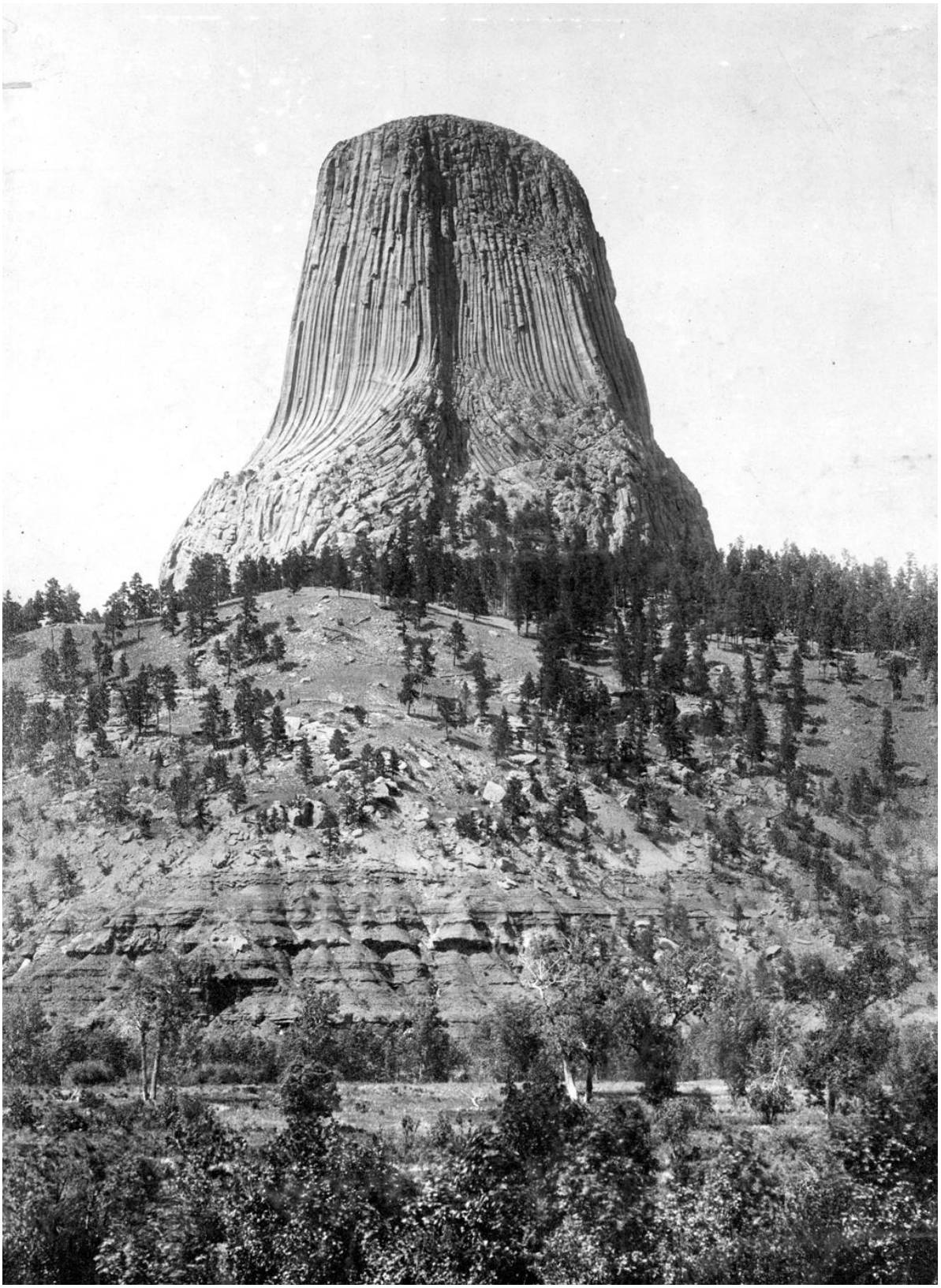

Figure 2. Devils Tower on the west bank of the Belle Fourche River, south of Hulett, Crook, Wyoming, circa 1900. Photo is by N.H. Darton and published in the U.S. Geological Survey Professional Paper 32 (1905). Photo from the U.S. Geological Survey photo library, image file: /htmllib/batch82/batch82j/batch82z/dnh00731.jpg

SHOWCASING a NATIONAL PARK or MONUMENT

Chapters of Sigma Gamma Epsilon, geology clubs, or individuals are encourage to compile and submit a collection of photos in color, black/white, or both, which highlight the significant geology of a national park or national monument. In some case, the collection might focus on a single aspect of a park or monument's geology, e.g. Yellowstone's obsidian cliffs (fig. 3) or the Tonto Group within the Grand Canyon sequence (fig. 4).

The goal is to provide a visually interesting 'photo album' of a national park or monument's, not a lengthy discussion of the geology. Submissions should include a brief (1-2 pages) introduction, including a brief history of the park or monument's establishment and the reason or purpose of the author(s) submission, e.g. why do the author(s) believe the collection of photos is significant. Each photo should contain an informative caption – the geological significance of the photo. If the submission is by a group, e.g. a geology club, the name of the photographer should be included for each photo. Although the purpose of the submission is to focus on recent photographs, one could certainly include 1 or 2 historical photographs, e.g. photographs taken by W.H. Jackson on the Hayden Survey of Yellowstone.

The U.S. Geological Survey photo library in Denver, CO maintains a collection of over 400,000 photographs taken by geologists, and others, as part of geological studies conducted in the United States and its territories. Photographs date from the 1860s to the present day. Over 30,000 of the library's photo collection are available on-line at http://libraryphoto.cr.usgs.gov/index.html. Photographs from the U.S. Geological Survey's photo library are part of the public domain, but captions need to provide credit, which is provided for each on-line photo (see examples provided herein). USGS photos specific to national parks can be found at http://libraryphoto.cr.usgs.gov/parks.htm

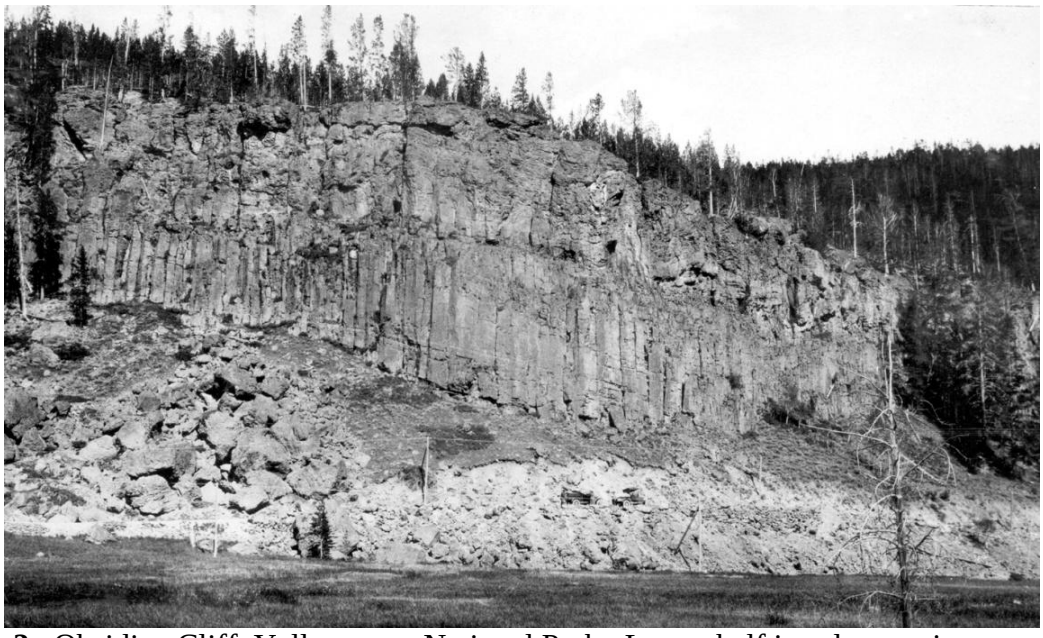

Figure 3. Obsidian Cliff, Yellowstone National Park. Lower half is columnar in nature, with denser, black obsidian at the base, while the upper half is more massive and irregularly porous. Photo by W.C. Alden, 25 June 1922. Photo from the U.S. Geological Survey photo library, image /htmllib/batch93/batch93j/batch93z/awc01232.jpg.

Figure 4. Exposure of (a) Muav Limestone, (b, c,) Bright Angel Shale, (d) Tapeats Sandstone and (e) of the Tonto Group exposed along the Colorado River in the Grand Canyon, Arizona. Photo by L.F. Noble, circa 1920 and published in U.S. Geological Survey Professional Paper 131 (1923). Photo from the U.S. Geological Survey photo library, image file: /htmllib/btch265/btch265j/btch265z/btch265/nlf00123.jpg